

Application No.: 10/761,992

Docket No.: JCLA11796

AMENDMENT**In The Claims:**

Claim 1. (currently amended) A method of fabricating an image sensor device, comprising:

providing a substrate having a plurality of trenches therein;

forming a first anti-reflective layer on surfaces of the trenches to reduce a reflection light from the bottom and the sidewall of the trenches;

filling an insulating layer in the trenches for forming a plurality of shallow trench isolation regions;

forming at least one photo sensitive region within the substrate between two neighboring isolation regions; and

forming a second anti-reflective layer at least covering the photo sensitive region.

Claim 2. (previously presented) The method of fabricating an image sensor device of claim 1, wherein the material of the first anti-reflective layer is selected from a group consisting of silicon nitride or silicon oxynitride.

Claim 3. (previously presented) The method of fabricating an image sensor device of claim 1, wherein the step of forming the first anti-reflective layer comprises a chemical vapor deposition method.

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Claim 4. (previously presented) The method of fabricating an image sensor device of claim 1, wherein the material of the second anti-reflective layer is selected from a group consisting of silicon nitride or silicon oxynitride.

Claim 5. (previously presented) The method of fabricating an image sensor device of claim 1, wherein the step of forming the second anti-reflective layer comprises a chemical vapor deposition method.

Claim 6. (previously presented) The method of fabricating an image sensor device of claim 1, wherein the step of forming the photo sensitive region comprises performing an implantation process.

Claim 7. (previously presented) The method of fabricating an image sensor device of claim 1, further comprising forming a liner layer on the surfaces of the trenches between the steps of providing the substrate and forming the first anti-reflective layer.

Claims 8-11 (canceled)

Claim 12. (newly added) A method of fabricating an image sensor device, comprising:
providing a substrate having a plurality of trenches therein, wherein the trenches together define at least one sensitive region of the substrate;

filling the trenches with a plurality of isolation structures respectively, wherein each isolation structure has an anti-reflective layer formed therein to reduce a reflection light from the bottom and the sidewall of the trenches; and

forming a plurality of photo sensitive regions within the sensitive regions of the substrate respectively.

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Claim 13. (new) The method of fabricating an image sensor device of claim 12, wherein the material of the anti-reflective layer is selected from a group consisting of silicon nitride or silicon oxynitride.

Claim 14. (new) The method of fabricating an image sensor device of claim 12, wherein the step of forming the anti-reflective layer comprises a chemical vapor deposition method.

Claim 15. (new) The method of fabricating an image sensor device of claim 12, wherein the step of forming the photo sensitive region comprises performing an implantation process.